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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,072	02/11/2004	Magnus Fagrell	6796-000010/US/DVB	3314
36593 7590 02/03/2009 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195				
EXAMINER				
WONG, EDNA				
ART UNIT		PAPER NUMBER		
1795				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/775,072

**Applicant(s)**

FAGRELL, MAGNUS

**Examiner**

EDNA WONG

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/857,455.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/88)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

This is in response to the January 2, 2009. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

### ***Response to Arguments***

#### **Double Patenting**

Claims **4-9** have been rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **14-18** of U.S. Patent No. **6,403,939 B1** (Fagrell).

The rejection of claims 4-9 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-18 of U.S. Patent No. 6,403,939 B1 (Fagrell) has been withdrawn in view of the terminal disclaimer filed on January 2, 2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 6,403,939, has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### **Claim Rejections - 35 USC § 103**

I. Claims **4-8** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **WO 91/12888** ('888) in combination with **Collins** (US Patent No. 3,281,648).

The rejection of claims 4-8 under 35 U.S.C. 103(a) as being unpatentable over WO 91/12888 ('888) in combination with Collins has been withdrawn in view of Applicant's amendment.

II. Claim 9 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **WO 91/12888** ('888) in combination with **Collins** (US Patent No. 3,281,648) as applied to claims 4-8 above, and further in view of **WO 95/27387** ('387).

The rejection of claim 9 under 35 U.S.C. 103(a) as being unpatentable over WO 91/12888 ('888) in combination with Collins as applied to claims 4-8 above, and further in view of WO 95/27387 ('387) has been withdrawn in view of Applicant's amendment.

III. Claims 4-6 and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Chitre et al.** (US Patent No. 4,687,895) in combination with **Greene et al.** (US Patent No. 6,175,104 B1).

The rejection of claims 4-6 and 9 under 35 U.S.C. 103(a) as being unpatentable over Chitre et al. in combination with Greene et al. is as applied in the Office Action dated July 2, 2008 and incorporated herein. The rejection has been maintained for the following reasons:

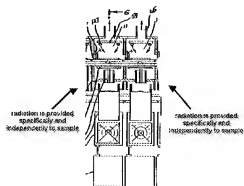
Applicant states that Chitre does not disclose that radiation is applied independently to each of the samples.

Applicant states that the radiation is applied to each sample individually such that "electromagnetic radiation is provided specifically and independently to each of the chemical reactions," as recited in amended claim 4.

In response, there is no requirement that the present claim limitations be expressly articulated in one or more of the references. References are evaluated by

what they collectively suggest to one versed in the art, rather than by their specific disclosures. *In re Simon* 174 USPQ 114 (CCPA 1972); *In re Richman* 165 USPQ 509, 514 (CCPA 1970).

Chitre teaches that the second object **163** is in the first microwave cavity **11** and the first object **163** is in the second microwave cavity **11**. The first and second microwave cavities **11** are activated along with the magnetron power supplies **75** for the first and second microwave cavities **11**. Each of the magnetron power supplies **75** is separately controlled to provide within the corresponding microwave cavity **11** the desired temperature, which may or may not be equal to the temperature desired in any of the other microwave cavities **11**. A microwave radiating means independently, selectively radiates microwave energy in each of said cavities (col. 11, lines 25-42; col.



13, lines 57-59; and Fig. 4:

).

Applicant states that at most, Green discloses a variety of microwave sources in a microwave enhanced chemical reaction apparatus (see column 1 lines 5-6 and column 3 lines 22- 26). Therefore, Green fails to disclose each and every element of

amended claim 4.

In response, the rejection is not overcome by pointing out that one reference does not contain a particular limitation when reliance for that teaching is on another reference. *In re Lyons* 150 USPQ 741 (CCPA 1966). Moreover, it is well settled that one cannot show nonobviousness by attacking the references individually where, as here, the rejection is based on a combination of references. *In re Keller* 208 USPQ 871 (CCPA 1981); *In re Young* 159 USPQ 725 (CCPA 1968).

### ***Response to Amendment***

#### ***Claim Objections***

Claim 6 is objected to because of the following informalities:

#### **Claim 6**

line 2, the word "sample" should be amended to the word -- samples --.

line 3, the word "sample" should be amended to the word -- samples --.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

Claims 4-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such

omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: between the plurality of chemical reactions and the first and second samples.

Claim 4

lines 1-2 (*preamble*), "performing a plurality of ***chemical reactions***."

line 5 (*body*), recites "***applying*** electromagnetic radiation to ***the first sample***."

line 9 (*body*), recites "***applying*** electromagnetic radiation to ***the second sample***."

lines 16-17 (*body*), recite "in which the electromagnetic radiation is ***provided*** specifically and independently ***to each of the chemical reactions***."

It appears that the electromagnetic radiation recited in lines 16-17 is applied to the first and second samples recited in lines 5 and 9 in the body of the claim, and not to each of the chemical reactions recited in lines 1-2 in the preamble of the claim.

***Claim Rejections - 35 USC § 103***

Claims **7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chitre et al.** (US Patent No. 4,687,895) in combination with **Greene et al.** (US Patent No. 6,175,104 B1) as applied to claims 4-6 and 9 above, and further in view of **WO 91/12888** ('888).

Chitre and Greene are as applied above and incorporated herein.

The method of Chitre differs from the instant invention because Chitre does not

disclose the following:

- a. Wherein the first and second samples are PCR mixtures, as recited in claim 7.
- b. Wherein the electromagnetic radiation is applied to the samples in cycles of at least two steps where the samples are cooled at least during a part of each cycle, as recited in claim 8.

Chitre teaches a microwave heating system (cols. 13-14, claim 1).

Chitre teaches that the second object **163** is in the first microwave cavity **11** and the first object **163** is in the second microwave cavity **11**. The first and second microwave cavities **11** are activated along with the magnetron power supplies **75** for the first and second microwave cavities **11**. Each of the magnetron power supplies **75** is separately controlled to provide within the corresponding microwave cavity **11** the desired temperature, which may or may not be equal to the temperature desired in any of the other microwave cavities **11** (col. 11, lines 25-42; col. 13, lines 57-59; and Fig. 4).

**WO '888** teaches a polymerase chain reaction (PCR) based on a cyclically repeated DNA synthesis by means of a thermostable DNA polymerase. The sample containers with the samples to be treated are maintained at three different temperatures during three different periods. Further passing through these temperatures should be cyclically repeated a number of times. As an example a cycle can be mentioned of subsequently 95°C during 1 minute. 37°C during 30 s and 65°C during 3 minutes, which cycle should pass 32 times (page 1, lines 11-22; and page 3, lines 2-13). The samples



are directly heated by microwave radiation (page 3, lines 36-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by Chitre with the first and second samples are PCR mixtures; and wherein the electromagnetic radiation is applied to the samples in cycles of at least two steps where the samples are cooled at least during a part of each cycle because the microwave heating system disclosed by Chitre would have provided three different temperatures in three different microwave cavities during three different periods, and thus, would have been suitable to carried out a polymerase chain reaction (PCR) as taught by WO '888 (page 1, lines 11-22; and page 3, lines 2-13 and 36-39).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edna Wong/  
Primary Examiner  
Art Unit 1795

EW  
January 31, 2009